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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,178	11/13/2000	James M. Clark	0918.0044C	6599

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EXAMINER

PATHAK, SUDHANSHU C

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/711,178

Applicant(s)

CLARK, JAMES M.

Examiner

Sudhanshu C. Pathak

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 20th, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 and 9-18 is/are allowed.
- 6) ☒ Claim(s) 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on November 13th, 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-to-7 & 9-to-25 are pending in the application.
2. Claim 8 has been canceled.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 19-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The subject matter claimed is a transmission signal, a signal in itself is unpatentable, but a method and apparatus to generate the desired signal are patentable.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over L.B. Milstein et al. (Combination Sequences for Spread Spectrum Communications; IEEE Transactions on Communications; July 1977; Pages 691-696) in view of Applicant Admitted Prior Art (AAPA).

Regarding to Claims 19-21 & 23, Milstein discloses a method for generating a long code comprising of multiple short codes (Abstract, Pg. 691, lines 1-7 &

Introduction, Pg. 691, Column 1, lines 22-28, 36-39 & Pg. 694, Column 2, Conclusion, lines 31-37). Milstein further discloses generating two shorter sequences of various lengths and different phase (Pg. 691, Column 2, lines 19-31 & Table 1 & Pg. 692, Column 1, lines 60-63 & Pg. 692, Column 2, lines 8-30, 59-61). However, Milstein does not disclose generating the short codes from a reference codes according to a pattern and further repeating the steps of generating the codes for a predetermined number of times.

The Applicant Admitted Prior Art (AAPA) discloses a method for generating a short code from a reference code (Fig. 2 & Fig. 3A-B & Specification, Page 3, lines 25-31 & Page 4, lines 1-11). The AAPA further discloses repeating the reference pattern a predetermined number of times until a predetermined maximal-length PN sequence is produced (Specification, Page 4, lines 1-4 & Fig. 2-3). The AAPA discloses the length of the reference pattern to be of seven symbols (Specification, Page 4, lines 5-11 & Fig. 2-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA teaches a method for generating short codes that can be combined to create a long code as described in Milstein. Furthermore, multiple reference codes and multiple shift registers can be implemented as described in the AAPA in parallel to generate multiple short codes, furthermore the changing the reference sequence code length and phase is a matter of design choice and there is no criticality in varying it depending on a predetermined pattern.

Regarding to Claim 22, Milstein in view of AAPA discloses a method and apparatus for generating a long code by combining multiple short codes as described above. Milstein further discloses generating short codes with multiple lengths and phases (Pg. 691, Column 2, lines 19-31 & Table 1 & Pg. 692, Column 1, lines 60-63 & Pg. 692, Column 2, lines 8-30, 59-61). Milstein further discloses generating short codes to generate a long code with a specified auto correlation (Table 1-4 & Pg. 691, Column 2, lines 32-63 & Pg. 693, Column 1, lines 1-29). The AAPA also discloses generating a long code to have good auto correlation properties (Specification, Pg. 1, lines 18-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the combinational long code generated by the combination of short codes as described in Milstein can be generated to have a specified autocorrelation characteristic, thus satisfying the limitation of the claim.

Regarding to Claim 25, Milstein in view of AAPA discloses a method and apparatus for generating a long code by combining multiple short codes as described above. However, Milstein does not disclose the reference code to be pseudonoise code.

The Applicant Admitted Prior Art (AAPA) discloses that the reference code generator to be a pseudonoise code generator (Fig. 1, element 2 & Fig. 2 & Specification, Pg. 1, lines 18-19 & Pg. 3, lines 17-31 & Pg. 3, lines 17-31 & Pg. 4, lines 1-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention the AAPA teaches that the reference code is a

pseudonoise code and can be implemented in generating the two different short codes as described in Milstein.

Allowable Subject Matter

5. Claims 1-to-7 & 9-18 are allowable over the prior art of record because the cited references do not contain the specified limitation of generating a dither code comprising a first and second short codes by dithering a reference code according to a dither pattern wherein the dither pattern repeats after the short codes are generated a predetermined number of times.

Response to Arguments

6. Applicant's arguments filed on May 20th, 2004 have been fully considered but they are not persuasive. The subject matter claimed in claims 19-25 is a transmission signal, a signal in itself is unpatentable, but a method and apparatus to generate the desired signal are patentable. A signal is an electromagnetic wave propagating through space, this is a natural phenomena and therefore, is not patentable, however a unique method and apparatus to generate the signal is not a natural phenomena and are patentable. The laws of nature, physical phenomena, and abstract ideas have been held not patentable. According to 35 U.S.C. 101 a patentable subject matter includes a useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, wherein an electromagnetic signal is not in either of the above mentioned categories. Furthermore, the subject matter claimed is disclosed in the prior art of record as disclosed above.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (703)-305-0341. The examiner can normally be reached on M-F: 9am-6pm.

- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703)-305-4714.
- The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sudhanshu C. Pathak



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